

MEMORANDUM

Date: June 19, 1997

Subject: Summary of the May 28, 1997, Metal Furniture Integrated Rule Development, First Roundtable Meeting (P-MACT/P-BAC) Phase

From: David Hendricks, EC/R Incorporated
Karen Holmes, EC/R Incorporated

To: Dr. Mohamed Serageldin, EPA/OAQPS/ESD/CCPG

The purpose of this memorandum is to summarize the discussion that took place during the first roundtable meeting for the metal furniture integrated rule development, held on May 28, 1997, at the Mutual Building in Durham, North Carolina. The meeting objectives were to identify data sources for the collection of information about the metal furniture industry, review the regulatory development process with industry and raise issues of concern to all parties, coordinate regulatory development efforts and scheduling with industry representatives, and to discuss potential data sources and action items for participants.

MEETING PARTICIPANTS

Environmental Protection Agency (EPA)

Mohamed Serageldin, Office of Air Quality Planning and Standards

EC/R Incorporated

Graham Fitzsimons
David Hendricks
Karen Holmes

Co-regulators and Industry Representatives

See Attachment 1.

SUMMARY OF DISCUSSION

Dr. Serageldin opened the meeting by welcoming all the participants and allowing each participant to provide a brief introduction. He then briefly explained that the EPA will be working simultaneously on the P-MACT and P-BAC processes. He stressed that the EPA has no predetermined ideas for the outcome of P-MACT/BAC process and is looking to industry for help in establishing P-MACT/BAC.

Ms. Mika presented an overview of Steelcase's pretreatment and cleaning operations, paint mixing and transferring, paint

application operations, and use of adhesives, as well as the state and federal regulations applicable to their facilities. One issue raised during the presentation was the use of single coat operations versus dual coat operations. It appeared that the larger metal office furniture participants such as Steelcase, HON Industries, Kimball, and Allsteel use single coat operations. Ms. Stookey pointed out that some of their customers use multiple coating steps. Ms. Mika emphasized the difficulty in tracking coating usage on a single line basis due to the fact that multiple mix rooms may service a single line and a single mix room may also service multiple lines. Ms. Mika also presented her concern over the amount of annual VOC reported in the March 23, 1995, Federal Register notice regarding the consumer and commercial product schedule for regulation under Section 183(e). Based on a coating usage of 21,000 gallons of coating per year for metal furniture and other 2500 SIC major source group codes, as listed in a U.S. Census report for 1995, she felt that the magnitude of annual VOC emissions reported in the Federal Register notice is too large and that inclusion of the metal furniture industry may not be justified based on emissions.

Dr. Serageldin responded that the ranking was not based solely on emissions but agreed that an accurate number must be established for the purpose of cost effectiveness calculations.

Mr. Lesnet stated that the industry representatives present at the meeting did not adequately represent all segments of the metal furniture industry, particularly household products. Dr. Serageldin stressed the need for the industry's help in identifying which industry segments are not represented. He stated that the MACT floor is based only on the information collected by the EPA.

Mr. Miller briefly discussed the role of the Business and Industrial Furniture Manufacturer's Association (BIFMA). He stated that BIFMA represents approximately 120 manufacturers and 80 suppliers to the industry, which accounts for about 80 percent of SIC code 2522. The other 20 percent is not represented at this point. Mr. Miller stated that his role is to keep member companies informed of the rule development process and to facilitate data transfer between member companies and the EPA.

Mr. Runyan questioned how the EPA is going to deal with metal components on wood furniture, wood components on metal furniture, and metal mechanisms. He also questioned why the EPA was looking at operations other than coating and cleaning. Dr. Serageldin stated that the EPA is not eliminating or excluding anything this early in the process. The magnitude of emissions related to each of these areas will have to be quantified before

a decision could be made. He explained that sources of all HAP emissions need to be reviewed for making major source determinations, but the regulation will only deal with coating and cleaning operations.

Dr. Serageldin presented an overview of the rule development process (see Attachment 2), then stated that the EPA intends to send out a voluntary survey that will concentrate on emissions from major sources at each facility. The first survey will be strictly voluntary and will not be issued under the authority of Section 114. Dr. Serageldin explained that the EPA needs to gain a good understanding of the industry as quickly as possible, but this survey is not intended to be comprehensive. A two-week schedule of completion upon receiving the survey was discussed to allow for the processing of the data for use in the second roundtable meeting scheduled for late July.

Ms. Mika questioned the purpose of P-MACT and the need to complete a survey for both the P-MACT process and then again for the actual MACT determination. She explained that it is a major expenditure of both time and money to complete these surveys. Several other industry representatives expressed concern regarding the need to go through the P-MACT process. They explained that it would be more beneficial to concentrate on defining the industry rather than developing a P-MACT which may not be representative of the entire industry. Another concern was raised that P-MACT, developed with limited and incomplete data, may be misused by states making Section 112(g) case-by-case MACT determinations.

Dr. Serageldin explained that the EPA needs to gain an understanding of the industry in order to develop a foundation for MACT and to determine what information is missing. He stressed the need for P-MACT as an essential step in the learning process, and explained that P-MACT will allow the EPA to learn about the metal furniture industry at an accelerated pace. Dr. Serageldin stressed that P-MACT is not binding on the EPA during the remainder of the MACT development process, or on the states when making Section 112(g) determinations.

Mr. Hendricks presented an overview of the metal furniture industry based on data that has been gathered to date (see Attachment 2). The presentation covered the following topics:

- SIC codes relevant to the metal furniture industry and primary products under each SIC code
- Total number of facilities and employees for the primary SIC codes

- States with the largest concentration of metal furniture manufacturing facilities
- Metal furniture manufacturing operations that may be sources of HAP emissions
- Summary of Toxic Release Inventory System emissions data for the primary SIC codes

Mr. Naour asked if, given the maturity of existing state regulations, is it possible for the EPA to provide a consolidation regulation based on state regulations, new sources, RACT, and the CTG. Past uses of this methodology were helpful, particularly for recordkeeping, recording, and monitoring requirements. Therefore, documentation would cover all existing regulations. Dr. Serageldin replied that this approach would be very useful, but the EPA does not have time to incorporate it for P-MACT. However, the EPA will consider this approach for MACT.

Mr. Naour stated that it may be helpful to the EPA to request Title V permit applications and emission inventory information from the states to gain a data set more representative of all sectors of the metal furniture industry.

Ms. Mika explained that some states, such as Michigan, do not require HAP speciation in their Title V emission inventories; therefore, this information may not be readily available.

Dr. Serageldin asked for suggestions regarding possible site visits. Mr. Lesnet suggested a possible site visit to either HON's Richmond, VA facility or their Cedartown, GA facility. He stated that the Richmond facility has three coating lines, two of which use coatings with a VOC content of 1.63 kg VOC/liter (2.8 lb VOC/gal), and the third which uses coatings with a VOC content of 1.46 kg VOC/liter (2.5 lb VOC/gal). The third line also uses heat to reduce the viscosity of the paint. The Cedartown, GA facility is an older facility which utilizes automatic application, dip application, and recovers overspray and remanufactures it for reuse. Most of the coatings used at the Cedartown facility have a VOC content of 1.75 kg VOC/liter (3.0 lb VOC/gal).

Ms. Mika suggested a possible site visit to Steelcase's Grand Rapids, MI facilities. Steelcase has a total of nine individual plants in the Grand Rapids area with a wide range of operations. The coating lines utilize coatings with a VOC content range of 1.75 kg VOC/liter (3.0 lb VOC/gal) to approximately 1.46 kg VOC/liter (2.5 lb VOC/gal) with abatement.

Dr. Serageldin questioned why coating VOC content does not typically go below 1.46 kg VOC/liter (2.5 lb VOC/gal). Mr. English explained that both performance and appearance limit VOC content. Mr. Lesnet explained that HON has tried lower VOC content paints at temperatures up to 170°F (to reduce viscosity). This method led to operator safety problems due to the high temperature. Mr. Lesnet expressed concern over the use of acetone, which is not a HAP and is an exempt VOC, as a solvent substitute that may lead to explosion problems with electrostatic equipment. Mr. English cautioned that HVLP has severe limitations due to the low volume of paint delivered, which may result in low line speed and reduced production. Mr. Lesnet stated that the particular solvent added to the coating may directly affect electrostatic performance. Therefore, substituting solvents may reduce transfer efficiency.

Dr. Serageldin presented example process flow diagrams, which detailed how to do a material balance around each unit operation. Ms. Mika expressed concerns that trying to estimate individual emission sources would lead to inaccurate data that may be used inappropriately. She stated that Steelcase simply does not have that level of detail available, and any estimates would be pure guesses. She also questioned the value of these numbers. Dr. Serageldin stated that the questionnaire will not ask for a speciation of HAP at each emission point. He stated that the EPA needs to understand the process to evaluate the significance of each emission point.

Several industry representatives expressed concern over the EPA's focus on the office furniture industry. Based on the current makeup of the Work Team, the database of information developed from these facilities will be office furniture specific and is not fair to other segments of the metal furniture industry who may have different coating types and requirements. One industry representative suggested sending letters to each state Chamber of Commerce requesting them to notify members with the relevant SIC Codes. Mr. Panchakarla stated that Florida will provide information on both point and area sources, but that it will include both metal and wood furniture.

At the close of the meeting, copies of the draft definitions of terms to be used throughout the standards development process were distributed (see Attachment 3).

ACTION ITEMS

- The EPA will send the voluntary questionnaire to everyone on the TRIS report list.

- The EPA will send the voluntary questionnaire to Work Team members by Tuesday, June 3, 1997.
- Tentative site visits will be scheduled to HON in July and to Steelcase in September.
- EC/R will contact the states with the highest concentration of metal furniture manufacturing facilities for information on Title V permit applications, emission inventories and RACT/BACT/LAER information.
- EC/R will generate a list of trade associations that have been contacted.
- The EPA will inform the Work Team members of the date of the next Roundtable meeting.

ATTACHMENT 1

LIST OF ATTENDEES

**METAL FURNITURE INTEGRATED RULE DEVELOPMENT
FIRST ROUNDTABLE MEETING
MAY 28, 1997
LIST OF ATTENDEES**

Name	Company	Mailing Address	Telephone/Fax Number	e-mail Address
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Stan Schmitt	Kimball, Inc.	1155 West 12th Avenue Jasper, IN 47549	(812) 634-3274 fax-(812) 634-3250	staschm@kimball.e-mail.com
Keith Masterson	Kimball, Inc.	1155 West 12th Avenue Jasper, IN 47549	(812) 634-3234 fax-(812) 634-3250	
Larry Runyan	AFMA	P.O. Box HP-7 High Point, NC 27261	(910) 884-5000 fax-(910) 884-5303	lfrun@aoi.com
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**METAL FURNITURE INTEGRATED RULE DEVELOPMENT
FIRST ROUNDTABLE MEETING
MAY 28, 1997
LIST OF ATTENDEES**

Name	Company	Mailing Address	Telephone/Fax Number	e-mail Address
Mary Ellen Mika	Steelcase, Incorporated	P.O. Box 1967 Mail Code: PS Grand Rapids, MI 49501	(616) 246-9787 fax-(616) 246-9191	mmika@steelcase.com
Venkata Panchakarla	Florida Department of Environmental Protection	Mail Station #5500 2600 Blair Stone Road Tallahassee, FL 32399	(904) 488-0114 fax-(904) 922-6979	panchakarla_v@dep.state.fl.us
Sherry Stookey	Lilly Industries	P.O. Box 2358 High Point, NC 27261	(910) 802-4305 fax-(910) 889-6007	
Robert Nelson	NPCA	1500 Rhode Island Ave. NW Washington, DC 20005	(202) 462-6272 fax-(202) 462-8549	bnelson@paint.org
Bob Shepherd	NC State University	Dept. of Chemical Engineering Box 7905 Raleigh, NC 27695-7905	(919) 515-1883 fax-(919)515-3465	Shepherd@che.ncsu.edu
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Mary Husted	Husted & Associates, Inc.	P.O. Box 5256 High Point, NC 27262	(910) 869-3097 fax-(910) 869-3031	
Jeffery A. Masi	Allsteel Inc.	71 Denton Fly Road Milan, TN	(901) 686-4116 fax-(901) 686-4120	
Hank Naour	Illinois EPA	Bureau of Air P.O. Box 19506 Springfield, IL 62794-9506	(217) 785-1716 fax-(217) 524-5023	

ATTACHMENT 2

EPA/ECR PRESENTATION

**EPA/INDUSTRY/STATES
ROUNDTABLE MEETING NO. 1**

**Metal Furniture
Integrated Rule Development**

May 28, 1997

RULE DEVELOPMENT OVERVIEW

NESHAP

- **Information Gathering**
- **MACT Floors**
- **Regulatory Alternatives, P-MACT, and MACT**
- **Regulatory Team - Industry and State Agency Involvement**
- **Impact Analyses**
- **Proposal**
- **Promulgation**
- **Implementation Guidance**

RULE DEVELOPMENT OVERVIEW

(concluded)

CONTROL TECHNIQUES GUIDELINES (CTG)

- **Information Gathering**
- **Regulatory Alternatives, P-BAC**
- **Impact Analyses**
- **CTG Publication**

SIC CODES RELEVANT TO THE METAL FURNITURE INDUSTRY

Primary SIC Codes

2514 - Metal Household Furniture

Bookcases	Camp Furniture
Chairs	Frames for Boxsprings
Tables	Cribs
Swings	Cots
Kitchen Cabinets	Garden Furniture
Medical Cabinets	Serving Carts

2522 - Office Furniture, Except Wood

Bookcases	Wall Cases
Chairs	Partitions
Tables	Modular Furniture
Desks	Benches
File Cabinets	

2531 - Public Building and Related Furniture

Benches	Theater Seating
Portable Bleacher Seating	Seats for Autos, Vans, Aircraft, Railroad
Stadium Seating	Church Furniture
School Furniture	

2542 - Office and Store Fixtures, Partitions, Shelving, and Lockers, Except Wood

Cabinets	Shelving
Counters	Showcases
Display Cases	Sorting Racks
Display Fixtures	Telephone Booths
Lunchroom Fixtures	Bar Fixtures

**SIC CODES RELEVANT TO THE
METAL FURNITURE INDUSTRY
(continued)**

Secondary SIC Codes

2599 - Furniture and Fixtures, Not Elsewhere Classified

Hospital Beds	Factory Furniture
Bowling Center Furniture	Ship Furniture
Cafeteria Furniture	Restaurant Carts

3429 - Hardware, Not Elsewhere Classified

Furniture Hardware	Convertible Bed Mechanisms
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3495 - Wire Springs

Furniture Springs	Spring Units for Seats
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3499 - Fabricated Metal Products, Not Elsewhere Classified

Metal Chair Frames	Metal Auto Seat Frames
Metal Furniture Parts	

3821 - Laboratory Apparatus and Furniture

Laboratory Furniture	Tables
Benches	Cabinets

3843 - Dental Equipment and Supplies

Dental Cabinets	Dentists' Chairs
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3999 - Manufacturing Industries, Not Elsewhere Classified

Beauty Shop and Barber Shop Furniture

7641 - Reupholstery and Furniture Repair

Furniture Repair/Refinishing
Antique Repair Restoration

**Number of Facilities and Employees
Primary SIC Codes**

<u>SIC Code</u>	<u>Number of Facilities</u>	<u>Number of Employees</u>
2514	452	138,978
2522	1661	252,014
2531	846	189,159
2542	1301	149,222

[insert bar chart showing number of facilities by number of employees]

**Number of Facilities in Primary SIC Codes
Top 10 States**

California	420
Michigan	294
New York	269
Florida	256
Illinois	235
Indiana	191
Texas	189
Missouri	161
Ohio	154
Pennsylvania	147

OPERATIONS THAT ARE POTENTIAL SOURCES OF HAP EMISSIONS

Metal Working (stamping, bending, forming, welding)

Metal Finishing (plating, anodizing, phosphating)

Cleaning (parts cleaning, spray gun cleaning, spray booth cleaning)

Paint Application and Curing/Drying

Touch-up and Repair

Storage, Handling, and Mixing of Solvents and Coatings

Wastewater Treatment

SUMMARY OF TRIS EMISSIONS DATA

Hazardous Air Pollutant	Non-point Emissions (kg/yr)	Point Emissions (kg/yr)
Xylene	295,921	1,267,253
Toluene	119,202	518,310
Glycol Ethers	63,439	157,882
1,2,4-Trimethylbenzene	72,070	141,438
Ethyl Benzene	29,566	158,348
Methyl Ethyl Ketone	31,001	125,390
Dichloromethane	53,386	91,126
n-Hexane	37,518	78,870
Methanol	34,871	74,750
1,1,1-Trichloroethane	46,572	19,992
Methyl Isobutyl Ketone	15,770	36,621
Trichloroethylene	3,293	13,173
Styrene	8,946	5,070
Formaldehyde	95	9,094
Cumene	3,115	1,144
Hydrochloric Acid	1,746	90
Manganese and	627	113
Naphthalene	0	579
Nickel and Compounds	510	0
Chromium and	247	2
Phthalic Anhydride	113	113
Diisocyanates	77	3
2,4-Toluene Diisocyanate	0	48
Ethylene Glycol	0	12
TOTAL (Mg/yr)	818	2,699

* 1Mg = 1.1 tons

SUMMARY OF EXISTING REGULATIONS AND SOURCE CATEGORY DEFINITIONS FOR THE METAL FURNITURE INDUSTRY

CTG VOC Emission Limit	0.36 kg of organic solvent emitted per liter of coating (minus water and exempt compounds)
	3.0 lbs of organic solvent emitted per gallon of coating (minus water and exempt compounds)
NSPS VOC Emission Limit	0.9 kg of VOC per liter of coating solids (non-volatiles) as applied

Source Category Definition (from: "Documentation for Developing the Initial Source Category List." EPA-450/3-91-030. United States Environmental Protection Agency, Research Triangle Park, NC. July 1992.)

The metal furniture source category includes any facility engaged in the surface coating and manufacture of metal furniture parts or products. Such products may include chairs, tables, cabinets, and bookcases.

CTG Definition of "Metal Furniture"

"Metal Furniture" includes any furniture made of metal or any metal part which will be assembled with other metal, wood, fabric, plastic or glass parts to form a furniture piece.

SUMMARY OF STATE REGULATIONS FOR EXISTING SOURCES OF SURFACE COATING OF METAL FURNITURE

- **30 States generally follow the guidelines established in "Control of Volatile Organic Emissions from Existing Sources Volume III: Surface Coating of Metal Furniture"; December 1977.**
- **15 States have no VOC limits specific to Metal Furniture.**
- **3 States have less stringent limits than set forth in the CTG.**
- **1 State has more stringent limits than set forth in the CTG.**
- **1 State has VOC limits not directly converted to the units in the CTG.**

PRELIMINARY SCHEDULE

<u>Date</u>	<u>Activity</u>
May 97	First site visit
May 97	Roundtable #1
July 97	Second/third site visits
July 97	Roundtable #2
August 97	Initial pre-MACT established
September 97	Roundtable options meeting
September 97	Pre-MACT established
December 98	Complete all data gathering efforts
December 99	MACT floors established
April 99	Select basis for standards
June 99	Draft proposed standard
August 99	Work Group review
December 99	Proposed regulation published in Federal Register
December 00	Promulgation of standard

ATTACHMENT 3

LIST OF DEFINITIONS

DRAFT DEFINITIONS

METAL FURNITURE INTEGRATED RULE DEVELOPMENT

**First Roundtable Meeting
May 28, 1997**

Abatement or recovery device (add-on control device) means any equipment that reduces the quantity of pollutant that is emitted to the atmosphere. The device may destroy or secure the pollutant for subsequent recovery. Examples are incinerators, carbon adsorbers, condensers, scrubbers, and baghouses.

Administrator means the Administrator of the United States Environmental Protection Agency (U.S. EPA) or his or her authorized representative.

Affected facility means, with reference to a stationary source, any apparatus to which a standard is applicable. Any operation or process line that is subject to a regulation or standard.

Alternative method means any method of sampling and analyzing for an air pollutant that is not a reference or equivalent method but has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for a determination of compliance.

As Applied means the condition of a coating at the time of application to the substrate, including any thinning solvent or any other additives.

As supplied means the condition of a coating before any thinning (or addition of additives), as sold and delivered by the coating manufacturer to the user.

BAC means Best Available Controls.

Baseline conditions means the conditions that exist prior to an affected source implementing controls, such as a control system.

Batch means the product of an individual production run of a coating manufacturer's process. A batch may vary in composition from other batches of the same product.

Capture means the containment or recovery of emissions from a process for direction into a duct, which may be exhausted through a stack or sent to an abatement or recovery device before exiting through a stack.

Capture efficiency means the fraction (usually expressed as a percentage) of the pollutants generated by a process that is directed to an abatement or recovery device.

Capture system means a hood, enclosed room, or other means of collecting air emissions into a closed-vent system that exhausts to a control device.

Cleaning activity means the physical removal of foreign material from the substrate being cleaned. Includes actions such as wiping, brushing, flushing, or spraying applied within an operation.

Closed-loop recycling (in-process recycling) means the reuse or recirculation of a chemical material within the boundaries used to develop a material balance around a "unit operation system." A recovery or reclamation unit operation may be within the boundaries selected for the primary unit operation system if it is:

1. Solely dedicated. The chemical is reused only within the primary unit operation.
2. Physically integrated. The recovery or reclamation operation connected to the primary unit operation by means of piping, so that it is not possible to perform

the material balance around the primary unit operation system without including it.

Coating means any material that can be applied as a thin layer to a substrate and which cures to form a continuous solid film.

Coating application means the process by which the coating mix is applied to the base substrate.

Coating line means any number or combination of coating applicators, flash off areas, and ovens which coat a substrate.

Coating operation means those activities in which a coating is applied to a substrate and is subsequently air dried, cured in an oven, or cured by radiation.

Coating solids means the part of the coating that remains after the coating is dried or cured. Solids (nonvolatile) content is determined using data from EPA Method 24, or an equivalent method.

Coating station means a unit on a coating line on which a coating operation is conducted.

Compliant coating means a coating whose volatile organic compound content does not exceed that allowed by regulation. Compliant coatings may be waterborne, low solvent (higher solids), or powder.

Control means the collection for recovery or destruction of pollutants which might otherwise be exhausted to the atmosphere.

Control device (see abatement or recovery device)

Control efficiency means one minus the fraction (usually expressed as a percentage) of the pollutants that are emitted from the control device compared to the pollutants entering the control device.

Control Techniques Guidelines (CTG) means a series of documents prepared by the EPA to assist states in defining reasonable available control technology (RACT) for major sources of volatile organic compound (VOC) material. The documents provide information on the economic and technological feasibility of available techniques and, in some cases, suggest limits on VOC emissions.

Criteria pollutant means a pollutant for which a criteria document has been issued as described by section 108 of the Clean Air Act. Criteria pollutants are nitrogen oxides, sulfur dioxide, ozone, particulate matter, and carbon monoxide. A National Ambient Air Quality Standard (NAAQS) exists for each criteria pollutant.

Exempt compound means specific organic compounds that are not considered volatile organic compounds due to negligible photochemical reactivity. Exempt compounds are specified in 40 CFR 51.100(s).

Existing source means any stationary source of air pollution other than a new source.

Facility means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

Film thickness means the thickness of the dry cured coating on the substrate.

Flash off area means the portion of a coating line after the coating applicator and before the oven entrance where solvent begins to evaporate from the coated base substrate.

Hazardous Air Pollutant (HAP) means any of 188 materials identified as air toxics in Section 112 of the Clean Air Act (see Attachment A for a list of HAP).

Hood or enclosure means devices used to capture emissions and direct them to an abatement or recovery device.

Major source means any source that emits or has the potential to emit, in the aggregate, 9.1 megagrams per year (10 tons per year) or more of any one HAP or 22.7 megagrams per year (25 tons per year) or more of any combination of HAP.

Manufacturer's formulation means a list of substances or component parts of coatings as described by the maker of the coatings.

Mass percent solids means the portion of a coating that remains as part of the cured film expressed as percent by weight. This contrasts to another convention of expressing content by volume percent.

Material balance means a calculation based on conservation of mass (i.e., the mass of material going into a process is equal to the mass of material that leaves the process). This relationship is often used to estimate solvent losses from coating operations.

New Source Performance Standard (NSPS) means standards for emission of air pollutants from new, modified, or reconstructed stationary emission source which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been demonstrated. The Clean Air Act usually refers to these as standards of performance for new stationary sources.

Nonvolatiles (or volume solids) means the film-forming material of a coating; also termed solids.

Offsite recycling means a recovery or reclamation unit operation system located outside of the plant boundaries.

Onsite recycling means a recovery or reclamation unit operation located within the plant boundaries from which the recycled material is returned to a process other than that which generated the waste material.

Oven means a chamber which uses heat or irradiation to bake, cure, polymerize, or dry a surface coating.

Pollution Prevention means practices or process changes that decrease or eliminate the creation of emissions (or solid or liquid wastes) at the source. Such prevention techniques include use of new materials, modification of equipment, changes in work practices, and closed-loop recycling.

Process (process line) means the sum of unit operations that result in the production of individual or groups of products.

Process fugitives means air emissions emanating from the process line that are not captured.

Product substitution means replacement of any product or raw material intended for an intermediate or final use with another. This substitution is a source reduction activity if either the emissions or the quantity of solid or liquid waste generated is reduced.

Reasonably Available Control Technology (RACT) means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. RACT is usually applied to existing sources in nonattainment areas and in most cases is less stringent than new source performance standards.

Reclaim means a material that is processed or regenerated to recover a usable product.

Recovery or regeneration unit operation means a device for purifying a material that may use a variety of techniques, including extraction, distillation, filtration, adsorption, or absorption.

Recycled means used, reused, or reclaimed (40 CFR 261.1(b)(7)). A material is "used or reused" if it is employed as an ingredient (including its use as an intermediate) to make a product.

Solids (see nonvolatiles)

Solvent means a liquid used to in a coating to dissolve or disperse constituents and/or to adjust viscosity. It generally evaporates during drying and, therefore, does not become part of the dried film.

Solventborne coating means a coating which contains only organic solvents. If water is present, it is only in trace quantities.

Stack means a contained air stream (excluding storage tanks), which are points through which emissions exit the facility.

Thinner means a liquid that is used to reduce the viscosity of a coating and that evaporates before or during the cure of a film.

Thinning ratio means the volumetric ratio of thinner to coating.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of the coated part to the total amount of coating solids used.

Treatment means any method, technology, or process designed to remove solids and/or pollutants from solid or liquid wastes, waste streams, effluents, and air emissions.

Unit operation means an industrial operation, classified or grouped according to its function in an operating environment. Examples include paint mixing vessels (tanks), spray booths, and parts cleaners. A unit operation may consist of one or more items of equipment.

Unit operation system (UOS) means the ensemble of equipment around which a material balance is performed. A UOS includes all possible points/sources that could result in losses to the atmosphere as a result of the operation.

Viscosity means a measure of a coating's resistance to flow.

Volatile organic compound means any volatile organic compound other than those listed by the EPA as exempt compounds.

Volume percent solids means the portion of a coating which remains as part of the cured film expressed as percent by volume. This contrasts to another convention of expressing solids content by mass percent. Often a percentage is given without specifying whether volume or mass. This is confusing and leads to errors in coating calculations.

Waste management means the handling, treatment, storage, and disposal of solid or liquid waste products.

Waste minimization means the reduction, to the extent feasible, of hazardous waste that is generated or subsequently treated, stored or disposed. It includes any source reduction or recycling activity undertaken by a generator that results in either (1) the reduction of total volume or quantity of hazardous waste, or both, so long as reduction is consistent with the goal of minimizing present and future threats to human health and the environment. In order of preference, these activities include: source reduction, recycling, and treatment.

Waterborne coating means a coating that contains more than 5 percent by mass water in its volatile fraction.

Work practice means specific human activities within industry that lead to a reduction in emissions (or waste). The activities include increased operator training, management directives, segregation of wastes, and practices that lead to a reduction in the frequency of an operation or activity that produces emissions. It does not include the use of specialized equipment, such as solvent dispensers (which is an equipment modification).